The CERN Multimedia Repository

Ludmila Marian
CERN

Invenio Interest Group
OR2014 - Helsinki, Finland

INVENIO Outline

- Provenience of multimedia
- Additional processing
- Outreach

CERN

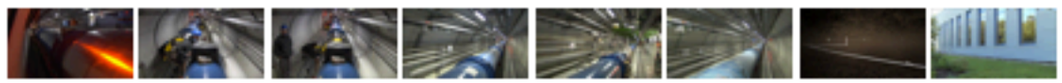
INVENIO Provenience

- CERN Multimedia
  - ~2’000 videos
  - ~5’500 lectures
  - ~15’500 photo records (~150’000 photos)
  - ~500 audios

CERN

INVENIO

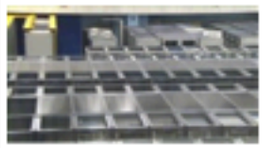
CERN HD Stockshots : LHC Machine and CERN Control Centre



33:20 min. / 24 January 2011 / © 2011 CERN
Produced by: CERN Video Productions
Director: CERN Video Productions
Keywords: CERN, stockshots, 2011, HD, LHC, animations, collisions, data, tunnel, cryogenic, CCC, CERN Control Centre, energy
Language: English
Source medium: DVCproHD PAL
Reference: CERN-VIDEORUSH-2011-009
Aditional resources:
Dopesheet: DOCX

Download Embed

Mp4:		High (600 kbps)	
Windows Media:	Medium (480 kbps)	High (753 kbps)	More..
Flash:		High (753 kbps)	
High-resolution:	MPG (1.8 GB) MOV (24.2 GB)		



CERN HD Stockshots : the GRID...
Duration: 08:16 min.
Date: 24 January 2011

CERN HD Stockshots 2011: 3D Animations...
Duration: 45:00 min.
Date: 24 January 2011

CERN HD Stockshots : the experiments of the LHC...
Duration: 45:00 min.
Date: 24 January 2011

CERN HD Stockshots : ATLAS experiment...
Duration: 12:13 min.
Date: 24 January 2011

CERN HD Stockshots : CMS experiment...
Duration: 16:33 min.
Date: 24 January 2011

CERN HD Stockshots : LHCb experiment...
Duration: 07:35 min.
Date: 24 January 2011

CERN HD Stockshots : ALICE experiment...
Duration: 09:19 min.
Date: 24 January 2011

Des faisceaux hybrides dans le LHC...
Duration: 01:02 min.
Date: 05 December 2011

More similar videos

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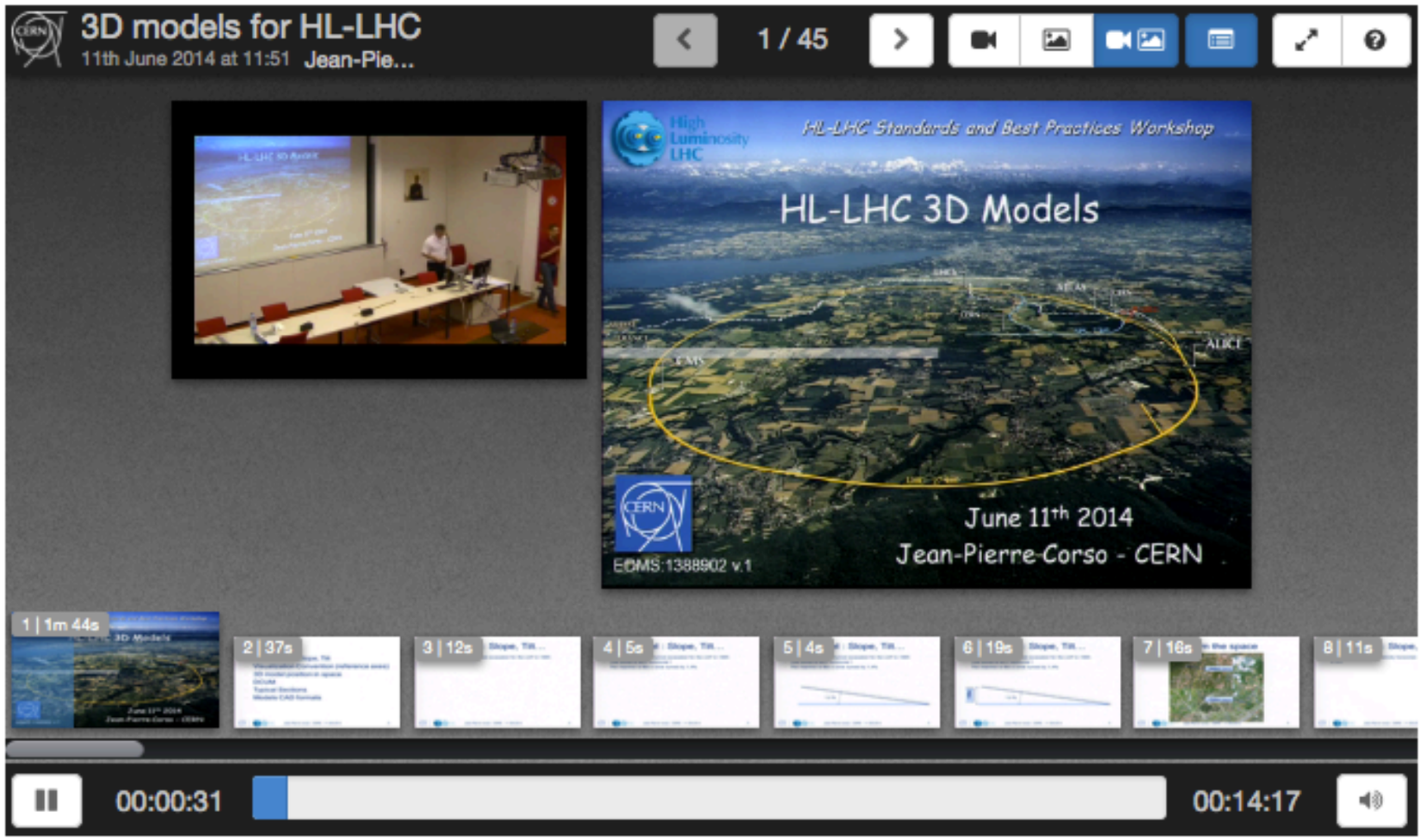
Record created 2014-06-12 12:21:06, last modified 2014-06-12 13:34:41

Talk

Title

3D models for HL-LHC

Video



Download

Author(s)	CORSO, Jean-Pierre (speaker) (CERN)
Corporate author(s)	CERN. Geneva
Imprint	2014-06-11. - Streaming video.
Series	(Technical Coordination meetings) (HL-LHC Standards and Best Practices Workshop)
Lecture note	on 2014-06-11T11:50:00
Subject category	Technical Coordination meetings
Copyright/License	© 2014 CERN
Submitted by	isabel.bejaralonso@cern.ch

Information | Discussion (0) | Files

Edit This Record

CERN PhotoLab / Personalities and History of CERN

CERN-HI-0810008

Mr Esko Hamilo State Under-Secretary for Foreign Affairs, Prime Minister's Office Finland

Need help to download high-resolutions?

View as Slideshow

CERN-HI-0810008-01

Small Medium Large High-res

CERN-HI-0810008-02

Small Medium Large High-res

CERN-HI-0810008-03

Small Medium Large High-res

CERN-HI-0810008-04

Small Medium Large High-res

CERN-HI-0810008-05

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Small Medium Large High-res

CERN-HI-0810008-21

Small Medium Large High-res

CERN-HI-0810008-22

Small Medium Large High-res

INVENIO Provenience

- Where is multimedia coming from?
  - CERN VideoLab
  - CERN PhotoLab
  - Lecture Recordings
  - Experiments (Movies, Masterclasses, Google hangouts, Photos)
  - Users

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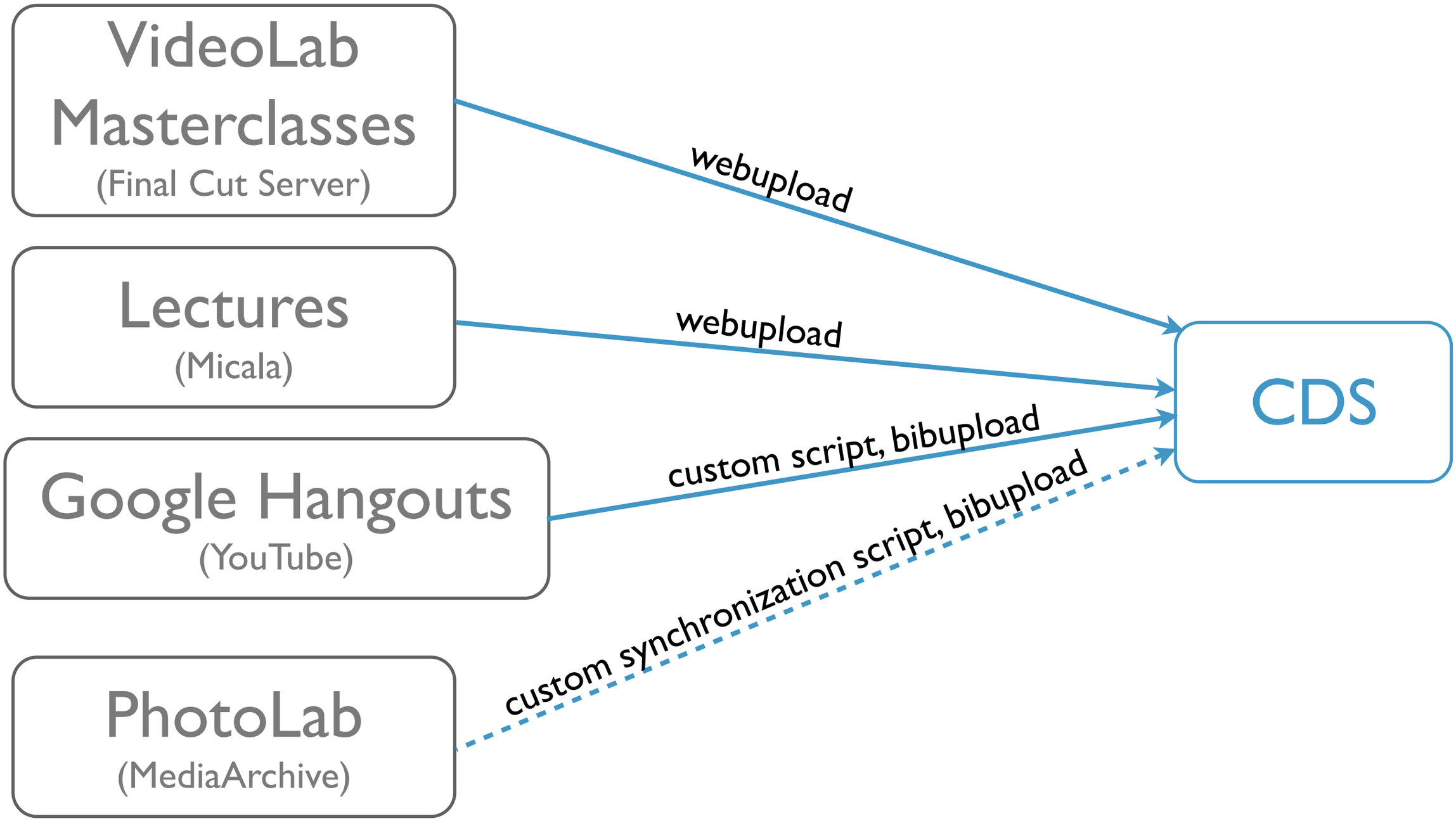
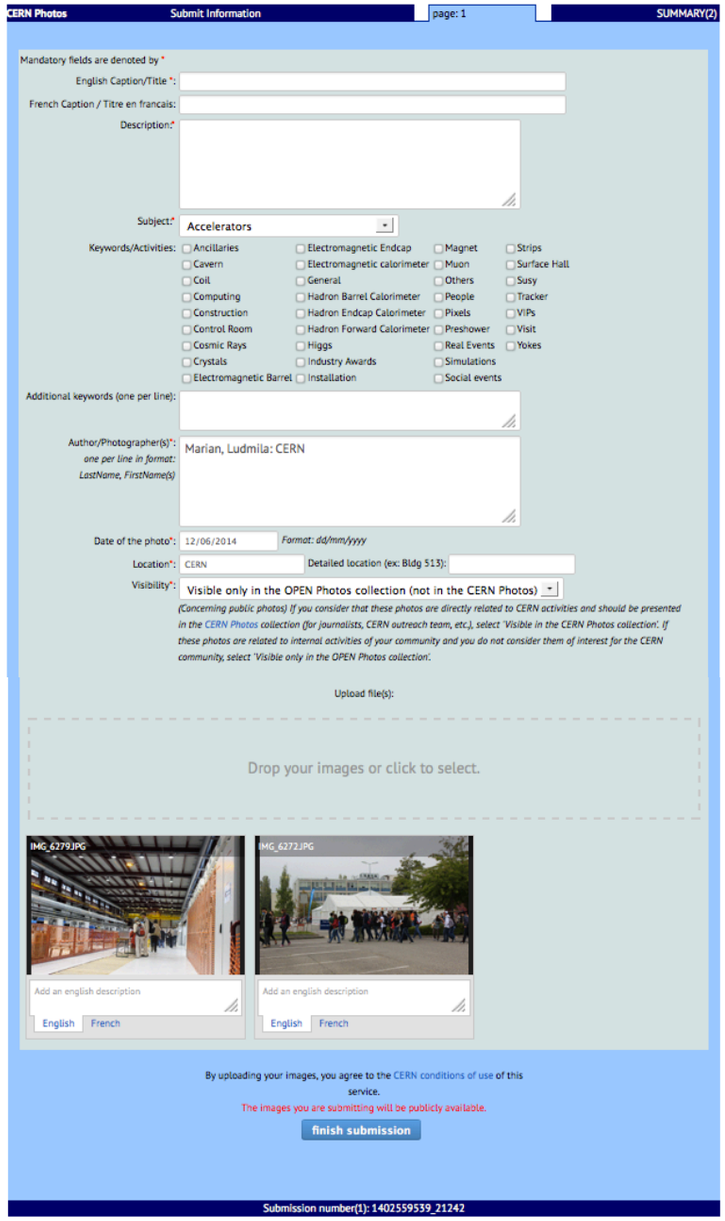
INVENIO External Provenience



INVENIO Internal Provenience

- Images
  - submitted via WebSubmit;
  - possibility of creating crop versions of the images.



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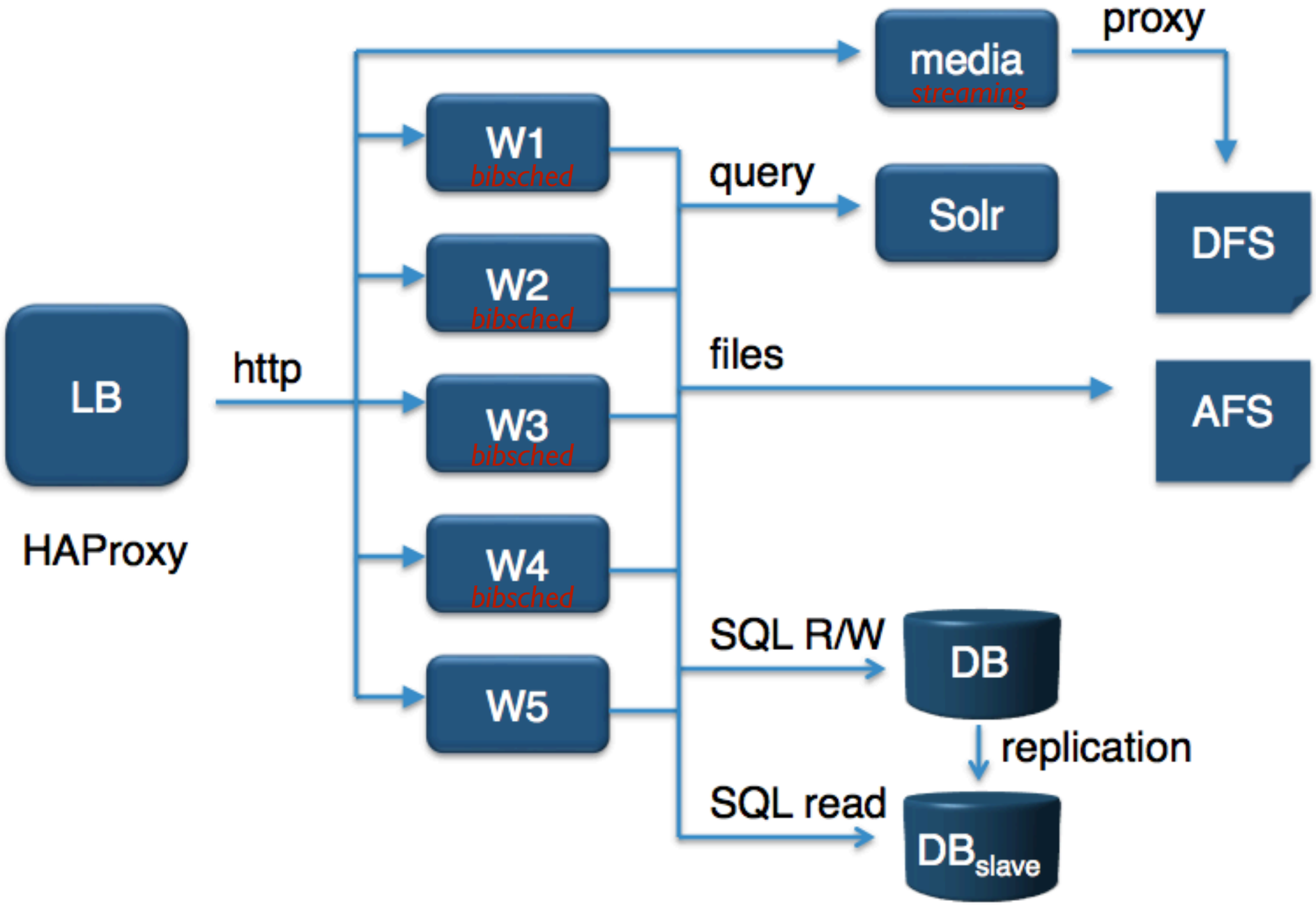
Additional processing

- Only for images:
  - asynchronous subformat creation (3 icon sizes: 180, 640, 1440 width) - via a bibtasklet;
  - Album creation (under testing)

INVENIO Infrastructure



INVENIO Outreach

CDS = common store for CERN multimedia material

Easy to export
Easy to reuse

INVENIO Photos/Videos

- Photos - Current state
  - one record - several images (one photo shoot)
    (even 300 images per record)
  - Photos stored either locally (BibDocFile) or externally (MARC) or both
- Videos - Current state
  - one record - one video (in most of the cases)
  - Videos stored externally (MARC)

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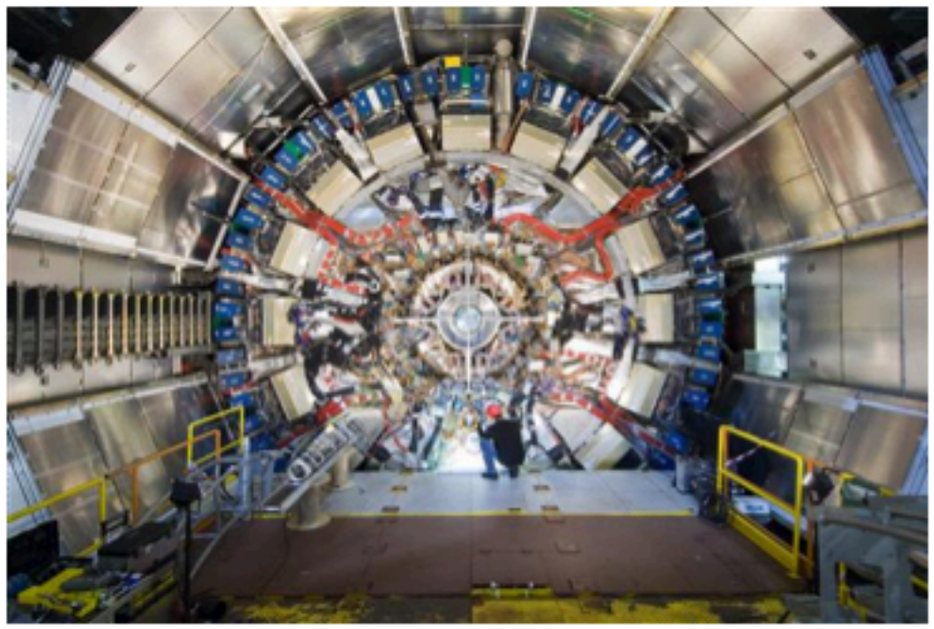
INVENIO Photos

- **New API for referencing one image:**
  - CFG_SITE_URL/images/{image-id} # image-id = reportnumber + counter
  - ex: *<http://cds.cern.ch/images/CERN-EX-0705021-01>*



The first ATLAS Inner Detector End-Cap after complete insertion within the Liquid Argon Cryostat.

About this image

Photographer: Claudia Marcelloni

Taken: 30 May 2007

Uploaded: 01 Jun 2007

Record last updated: 29 Jul 2013

Keywords: LHC, Detector Installation, Inner Detector, ATLAS, Best, endcap

More images in CDS

License

©CERN Some rights reserved.
This image is freely available for non-commercial use.

Sizes

- Large
- Small
- Medium
- Original

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INVENIO Photos/Videos

- **New API for exporting** (the API used for communicating with Drupal sites):
  - Using **oEmbed** format (used also by YouTube, Vimeo, Flickr, Instagram, ..)
  - Endpoint: CFG_SITE_URL/api/oembed
  - URL Scheme: CFG_SITE_URL/images/.* ; CFG_SITE_URL/video/.*
  - Additional parameters: maxwidth, maxheight, format={xml, json}
  - ex: *http://cds.cern.ch/api/oembed?url=http://cds.cern.ch/images/CERN-EX-0705021-01&format=json*


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INVENIO Photos/Videos


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+ - view source

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CERN

INVENIO Photos/Videos

- **Custom exporting API** (for CERN consumers) - also JSON based
  - covers all multimedia material
  - Endpoint: CFG_SITE_URL/api/mediaexport?id={*persistent-identifier*}
  - ex: *http://cds.cern.ch/api/mediaexport?id=ATLAS-PHO-COLLAB-2014-008-17*
  - ex: *http://cds.cern.ch/images/ATLAS-PHO-COLLAB-2014-008-17/file?size={small, medium, large}*

INVENIO Photos/Videos

ATLAS Photos / ATLAS / Collaboration

ATLAS-PHO-COLLAB-2014-008

IBL installation into the inner detector of the ATLAS Experiment side C

View as Slideshow

ATLAS-PHO-COLLAB-2014-008-9

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-1

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-2

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-3

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-4

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-5

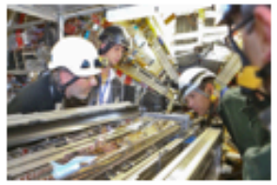
Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-6

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-7

Small, Medium, Large, Original



ATLAS-PHO-COLLAB-2014-008-8

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-10

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-11

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-12

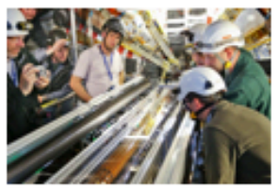
Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-13

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-14

Small, Medium, Large, Original



ATLAS-PHO-COLLAB-2014-008-15

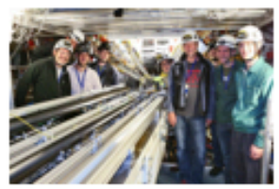
Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-16

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-17

Small, Medium, Large, Original



ATLAS-PHO-COLLAB-2014-008-18

Small, Medium, Large, Original

IBL installation into the inner detector of the ATLAS Experiment side C

Photograph: Marcelloni De Oliveira, Claudia

Date: 15-05-2014

CERN

INVENIO Photos/Videos

ATLAS Photos / ATLAS / Collaboration

ATLAS-PHO-COLLAB-2014-008

IBL installation into the inner detector of the ATLAS Experiment side C

View as Slideshow

ATLAS-PHO-COLLAB-2014-008-9

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-1

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-2

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-3

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-4

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ATLAS-PHO-COLLAB-2014-008-5

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ATLAS-PHO-COLLAB-2014-008-6

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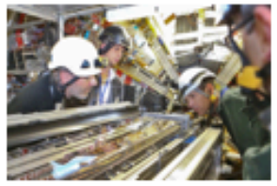
ATLAS-PHO-COLLAB-2014-008-7

Small, Medium, Large, Original



ATLAS-PHO-COLLAB-2014-008-8

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ATLAS-PHO-COLLAB-2014-008-10

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ATLAS-PHO-COLLAB-2014-008-11

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-12

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ATLAS-PHO-COLLAB-2014-008-13

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ATLAS-PHO-COLLAB-2014-008-14

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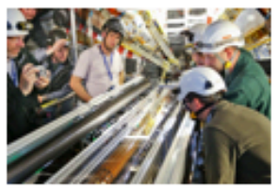

ATLAS-PHO-COLLAB-2014-008-15

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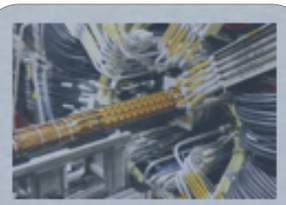
Small, Medium, Large, Original



ATLAS-PHO-COLLAB-2014-008-17

Small, Medium, Large, Original

ATLAS-PHO-COLLAB-2014-008-18

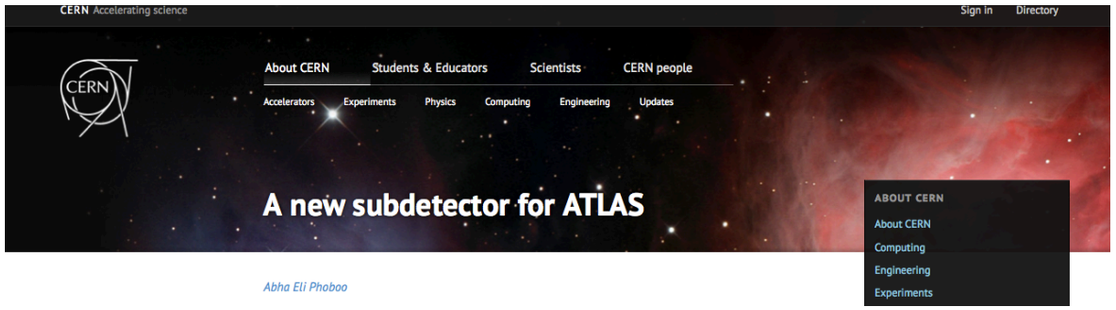
Small, Medium, Large, Original

IBL installation into the inner detector of the ATLAS Experiment side C

Photograph: Marcelloni De Oliveira, Claudia

Date: 15-05-2014

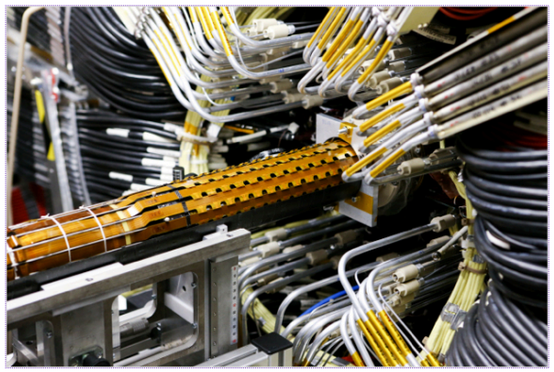
INVENIO Photos/Videos



Abha Eli Phoboo

The problem given was that with higher luminosity in the LHC's next run, significant radiation damage of the inner layers of the detector could occur, which meant ATLAS would lose tracking efficiency, especially in tagging the decay of the beauty quark – crucial for physics analyses. The idea was to minimize risks by creating an insertable layer instead of replacing the existing B-layer in the Pixel Detector. The IBL was born but the only way to integrate it was by shrinking the diameter of the beam pipe and inserting it into the gap between the Pixel Detector and the pipe.

The IBL is now the new fourth layer in the inner detector region of ATLAS, an additional point for tracking particles. More points mean better precision which is always good for physics.



The Insertable B-Layer (IBL) in the final stages of insertion. This subdetector is now the fourth layer in the inner detector region of the ATLAS experiment *(Image: Claudia Marcelloni de Oliveira/CERN)*

Making space wasn't the only challenge for the IBL project. Much of the technology did not exist. Increased luminosity in the LHC meant the IBL has to cope with high radiation and higher particle occupancy because of its proximity to the particle interaction point in the beam pipe. This also meant the number of hits on the detector and the amount of data collected will increase substantially. Faster read-out chips and two different silicon sensor technologies were developed. Pixel size was reduced to 50 by 250 micrometres, and a CO_2-based cooling system was introduced as opposed to the C_3F_8. New carbon foam structures were invented to support the modules that make up the IBL. These staves had to be just firm enough to serve as mechanical support but flexible enough to be inserted.

As remarkable as the developments were, even more remarkable is the collaborative nature of the project. Forty-seven institutes from 15 countries were involved in the IBL team. Its success, as does everything else in ATLAS, depended on the members.

"The ambiance in the cavern during the insertion was pivotal," says Sébastien Michal, who together with Raphaël Vuillermet, coordinated the engineering and installation. "There was a lot of confidence there because of the many practice sessions, but more importantly, there was a lot of trust."

Posted by Cian O'Luanaigh on 21 May 2014. Last updated 21 May 2014, 18.29.

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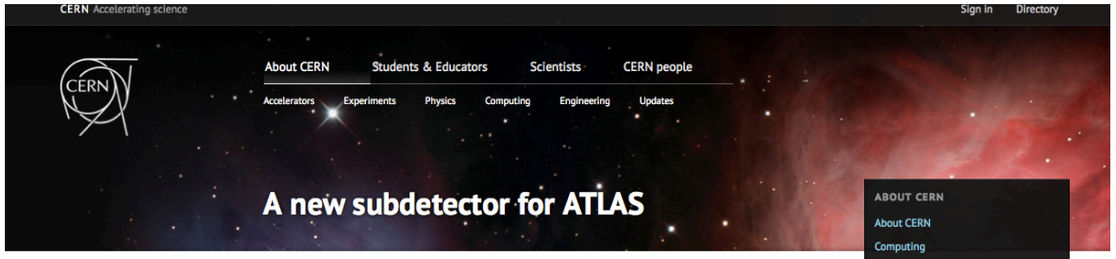
INVENIO Photos/Videos



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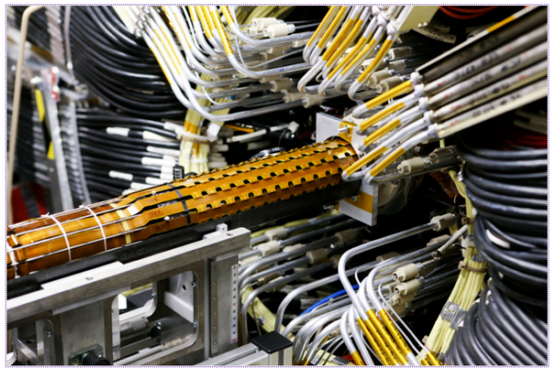

The Insertable B-Layer (IBL) in the final stages of insertion. This subdetector is now the fourth layer in the inner detector region of the ATLAS experiment *(Image: Claudia Marcelloni de Oliveira/CERN)*

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Posted by Cian O'Luanaigh on 21 May 2014. Last updated 21 May 2014, 18.29.


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INVENIO Photos

- **New API for exporting/embedding image slideshows**
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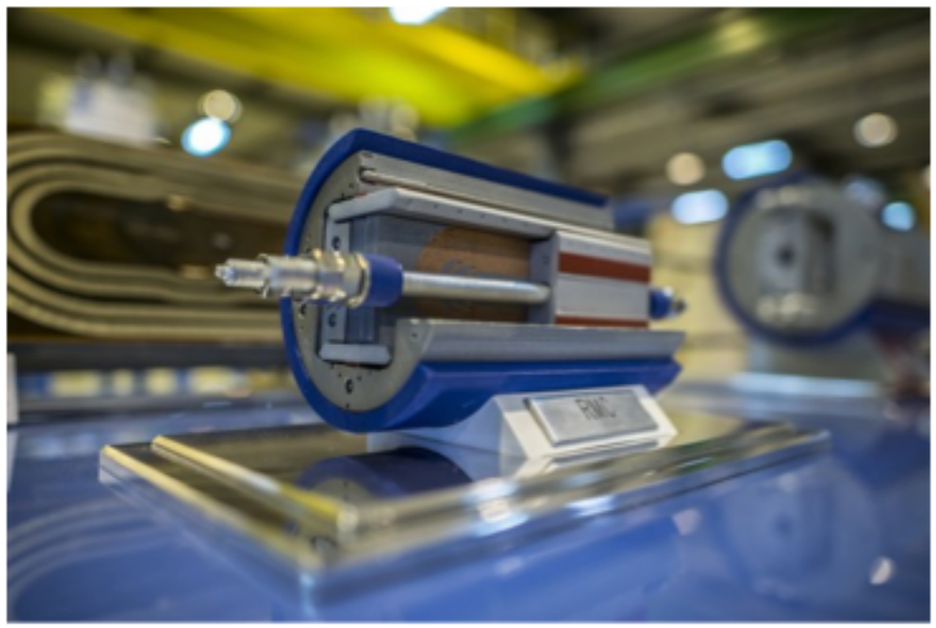
keywords/CERN%20PHOTOWALK?format=slideshow&w=200&h=200" allowfullscreen></iframe>
```



Photowalk around IT

Full gallery from CDS

INVENIO Videos

- **New API for embedding a video**
  - CFG_SITE_URL/video/{video-id} # video-id = report number (persistent identifier)

```
<iframe src="http://cdsweb.cern.ch/video/CERN-MOVIE-1967-001 " allowfullscreen=""
frameborder="0" height="360" width="480"></iframe>
```

  - Improves:
    - **Integration and accessibility** (device-specific embedding code)
    - **Persistence** (the URL in the embedding code will never change even if record id will change, streaming get's updated, slaves get regenerated)
    - **Sharing and connectivity** (inside the embedding video frame: *sharing tools* and *related videos*)

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INVENIO Embedding of Videos

CERN OPENDAYS

Our Universe is Yours

Notre Univers est le vôtre

about us

- Organisation
- Data Centre
- Projects
- Meeting catalog
- OpenDays 2013
  - What We Do
  - The Data Centre
  - Birth of the Web
  - Grid computing
  - Media

IT Department @ CERN OpenDays 2013

- English
- Français

Welcome to the Information Technology Department!

As part of the CERN OpenDays, the IT Department literally opened the doors to its Data Centre so you could discover more about our role in discoveries and research at CERN and beyond.

We have compiled here all the material on display during the OpenDays, as well as some more information to help you further explore some of the things you may have seen.

The Itinerary

After the video, there were separate guided tours of the 2 main computing rooms - one in our immense hall of racks and servers, and the other down into the basement to walk through our data storage vault.

In addition to the main visit of the Data Centre, some demonstrations of our computing took place next to the Data Centre. There was an opportunity to find out more about Grid computing and talk to some of its experts. Visitors could immerse themselves in our special Liquid Galaxy 'surround screen' and go on a Google Virtual Tour of the Data Centre.

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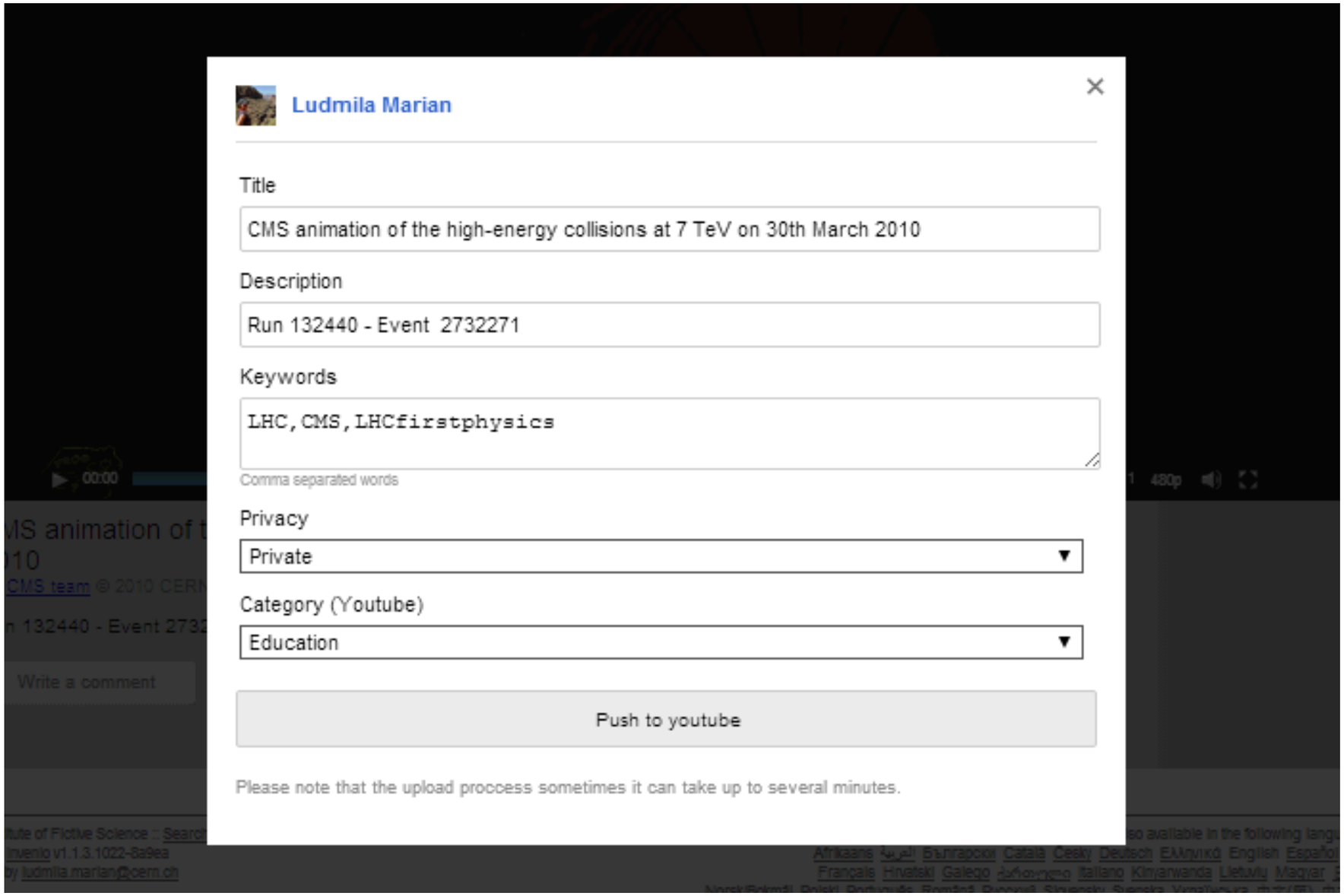
INVENIO Push to YouTube

Demo

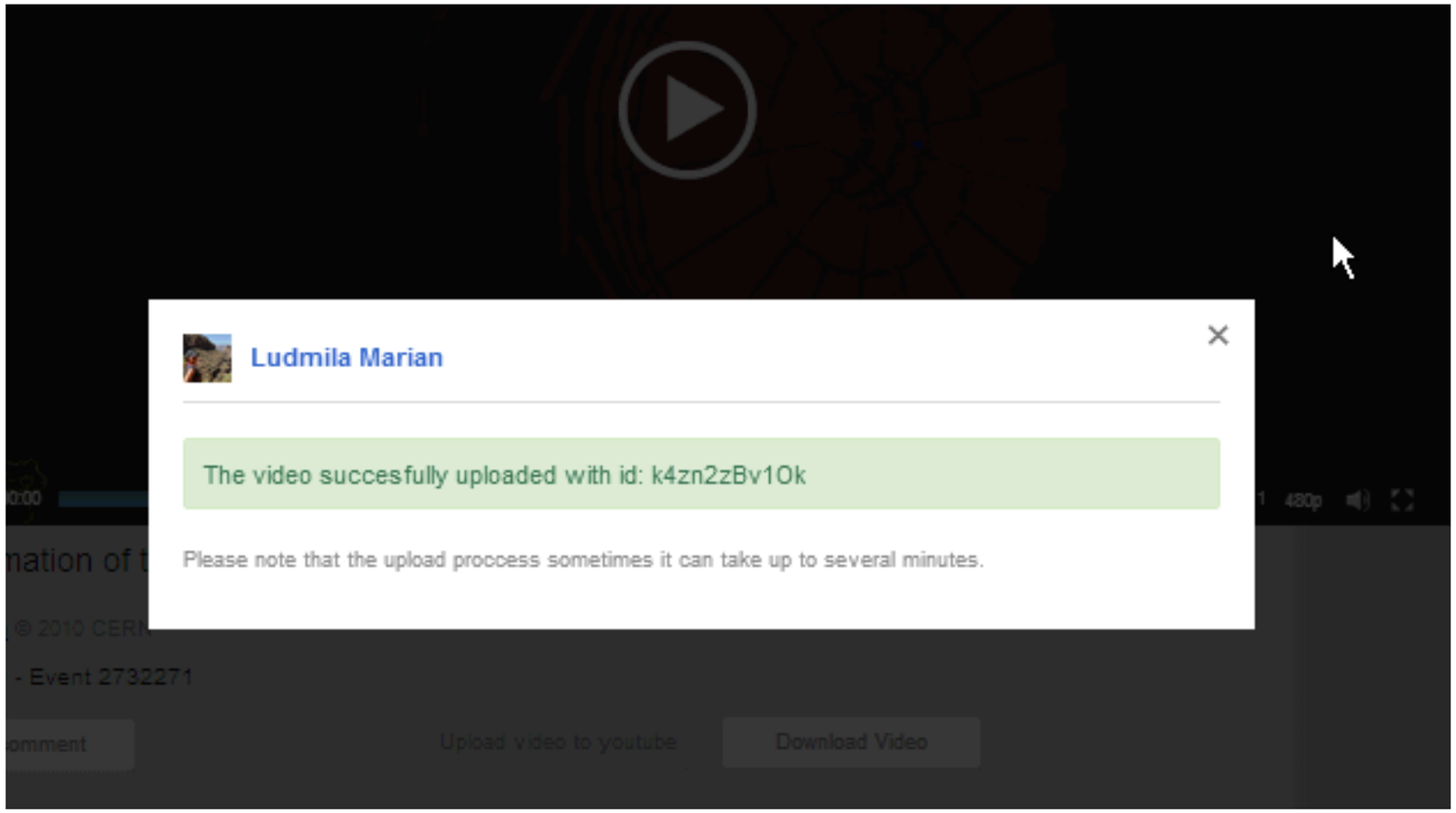
CERN

Push to YouTube

INVENIO Push to YouTube



INVENIO Push to YouTube



INVENIO Push to YouTube

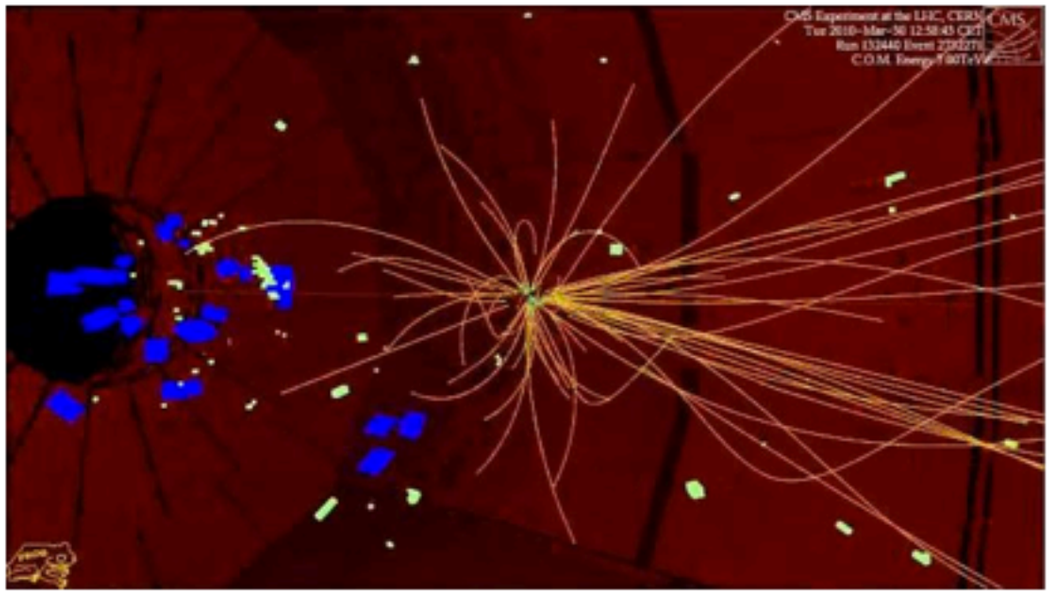
YouTube <noreply@youtube.com> Unsubscribe

to me

11:22 PM (34 minutes ago)

YouTube

Way to go, Ludmila Marian!
Looks like you uploaded your first ever YouTube video.



CMS animation of the high-energy collisions at 7 TeV on 30th March ...

Hope you enjoy your video, and welcome to the community!
Your latest fan, The YouTube team

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INVENIO Photos/Videos

- Copyright and License
  - CERN is progressively moving from CERN license to CC-BY-SA license for photos (and videos);
  - Pilot project (89 images so far);
  - Current work on consolidating the copyright/license usage across Invenio:
    - better support at the level of BibDocs (each BibDoc can have it's own copyright&license); can be updated via the interface.
    - better support in the MARC (several copyright&license statements supported: for the record, for each of the files attached);
    - updating EXIF (for photos) with the copyright&licence from MARC;

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INVENIO Photos

- Current state
  - one record - several images (one photo shoot) *(even 300 images per record)*
  - Photos stored either locally (BibDocFile) or externally (MARC) or both
- Shortcomings of the current model
  - Needs workaround for referencing one image (*http://cds.cern.ch/images/CERN-EX-0705021-01*)
  - Not possible to add per image metadata (tags, keywords, description, comments, ..), to add to baskets (possible only as external links)
  - .. (not possible to reference each image as an object)

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INVENIO Photos

- New document model: Albums
  - already (slightly) in use for Videos
  - ex: *http://cds.cern.ch/record/1606846* (MARC for TOC, MARC for Asset)

```
<datafield tag="037" ind1=" " ind2=" ">
    <subfield code="a">CERN-MOVIE-2013-118-001</subfield>
</datafield>
<datafield tag="773" ind1=" " ind2=" ">
        <subfield code="o">FCS.project.252</subfield>
        <subfield code="r">CERN-MOVIE-2013-118</subfield>
</datafield>
```

```
<datafield tag="037" ind1=" " ind2=" ">
        <subfield code="a">CERN-MOVIE-2013-118</subfield>
</datafield>
<datafield tag="774" ind1=" " ind2=" ">
        <subfield code="r">CERN-MOVIE-2013-118-001</subfield>
</datafield>
<datafield tag="774" ind1=" " ind2=" ">
        <subfield code="r">CERN-MOVIE-2013-118-002</subfield>
</datafield>
<datafield tag="774" ind1=" " ind2=" ">
        <subfield code="r">CERN-MOVIE-2013-118-003</subfield>
</datafield>
```

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INVENIO Photo Albums

- 1 photo per record (main photo + slaves)
- 1 record representing the Album, containing references of the photos + possible order in the Album
- the photo record will be a 1st class citizen: baskets, comments, sharing, exporting = out of the box with Invenio
- also many improvements:
  - more flexible and customizable slideshow embedding for albums
  - photo overlays
  - widget framework: for easy addition of new features
  - easy creation of new Albums by selecting photos from existing Albums
  - read/write EXIF (at submission time, for pre-filling the form and exporting metadata with the photo)

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INVENIO Photo Albums

Servicing the first web server - Tim Berners-Lee's NeXT

In August 2009 a team from the Association aBCM in Lausanne came to CERN to give the world's first web server a health check under the watchful eye of web pioneer Robert Cailliau. They took an image of the hard drive at this time, copies of which were given to Robert Cailliau and Tim Berners-Lee.

Grap the link | Embed Album

21 photos

Load more ...

Date: 2009

Photographer: A

Keywords: Computing ; World Wide Web ; NeXT ; Computers and Control Rooms

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20 of 20

Servicing the first web server - Tim Berners-Lee's NeXT

Photo details

F Number	200
Orientation	1
Exposure	10/130
Date Taken	2009:08:15 09:04:07
Dimensions	4288x2848
Copyright	-
Photographer	-
Flash	0
Caption	-
Camera Make	NIKON CORPORATION
ISO	200
Location	0.0,0.0
Camera Model	NIKON D90

Photographer

Association aBCM

Keywords

Computing,World Wide Web,NeXT,Computers and Control Rooms

INVENIO Photo Albums

Settings

Width	500	Autoplay	Yes
Height	320	Show Navigation	Yes
Transition Speed	800	Transition Effect	Slide
Color	#000000		
Autoplay Speed	12000		

Grap the code

```
<iframe width="500" height="320" src="http://ubuntu13/media/album?format=gallery&album_id=100&
options=width=500,height=320,transitionSpeed=800,color=%23000000,autoplaySpeed=12000,enableAutoplay=true,showNavigation=true,effect=slide"
scrolling="no" frameborder="0"></iframe>
```

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INVENIO Ongoing R&D

- Image similarity
  - finding exact match (disregarding image processing like cropping, rotation, resizing) - for better interlinking between photos and records using the photos (Bulletin, Currier, etc.)
  - finding visual similar images (content based image retrieval) - for improving the image search

- How
  - LIRE (Lucene Image REtrieval) for feature computation - not enough
  - combine features, CLUE, SIFT-like features

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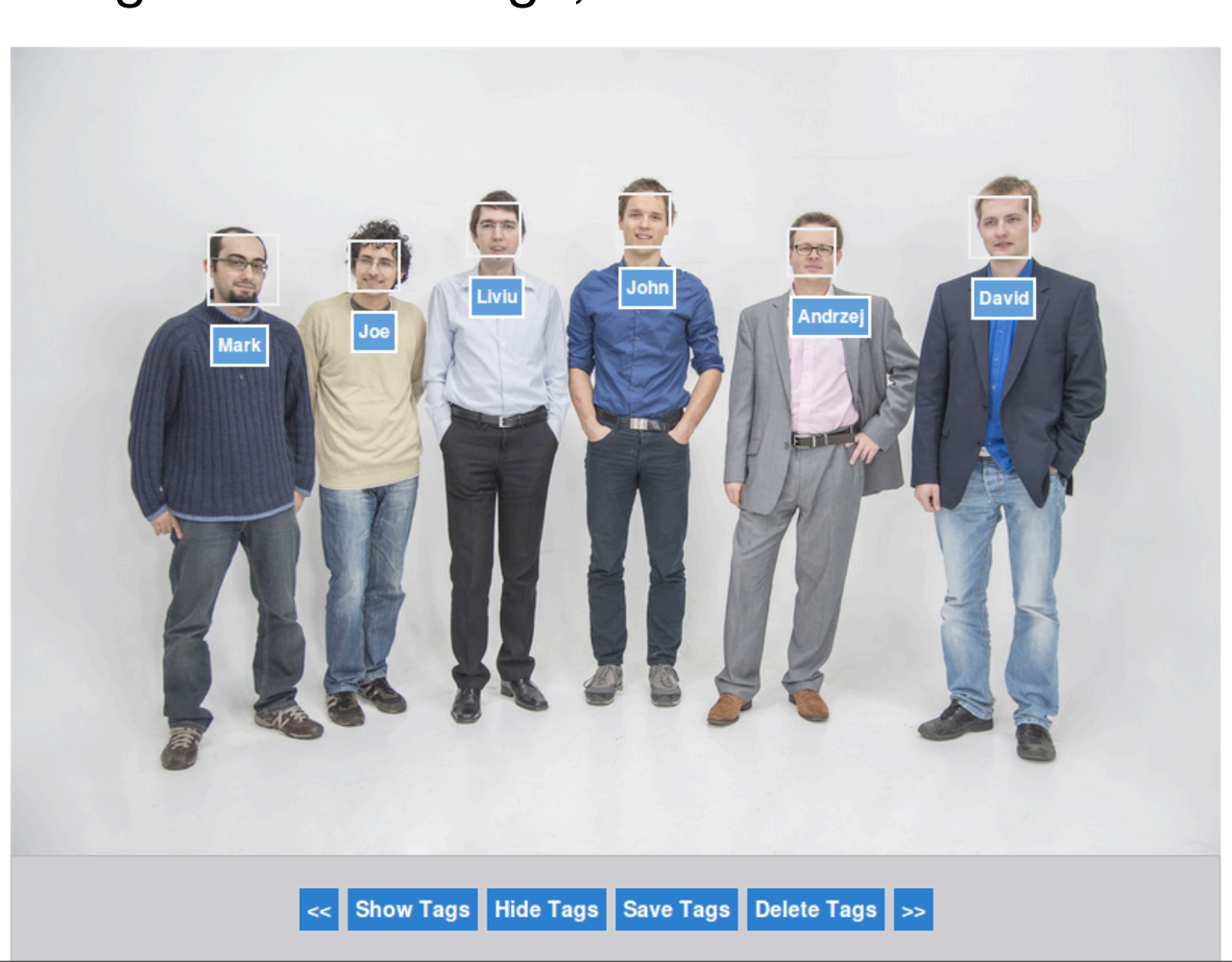
INVENIO Ongoing R&D

- Image Tagging
  - offer the possibility of tagging people/objects on an image;
  - face recognition;
  - exporting the tags with the image;



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INVENIO Questions?

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cds.support@cern.ch

ludmila.marian@cern.ch

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